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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,725

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Masahiro Ishida

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EXAMINER

MAKI, STEVEN D

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

03/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,725	ISHIDA, MASAHIRO	
	Examiner	Art Unit	
	Steven D. Maki	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>101707</u> . | 6) <input type="checkbox"/> Other: _____ |

1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12-28-07 has been entered.

2) Claims 1 and 5-10 are objected to because of the following informalities:
In claim 1, "repeated manner e" should be --repeated manner--. Appropriate correction is required.

3) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4) Claims 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 8-10, the reference for determining "convex" and "concave" is ambiguous. If the reference for determining "convex" and "concave" is the center side (inside), then claim 8 (dependent on claim 1) is indefinite because the subject matter of "a concave side edge and a convex side edge" (claim 8) is inconsistent with the subject matter of "sidewalls which are curved parallel to each other" (claim 1). It is noted that the reference for the term "convex" in the original disclosure is center side (inside) of figure 1, or in other words, the straight center groove 1 / equatorial plane of the tire. Both side edges of the groove 3a in figure 1 are "convex" relative to the center side

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(inside) of the tire. It is not understood why applicant is using both terms "concave" and "convex" for a groove which the original disclosure characterizes as having a "convex portion".

5) The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Incorporation of the description "a concave side edge and a convex side edge" in claim 8 into the specification is required. However, note the above 112 second paragraph rejection.

6) Applicant is advised that should claim 11 be found allowable, claims 13 and 14 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim 13 (dependent on claim 11) and claim 14 (dependent on claim 11) have the same scope as claim 11. The subject matter in claims 13 and 14 is already required by claim 11.

7) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8) **Claims 1 and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over German 475 (DE 4239475) in view of Japan 711 (JP 2002-059711) and Japan 208 (JP 03-074208).**

German 475, directed to a tread design producing good aquaplaning properties but without increasing roll noise, discloses a vehicle tire (pneumatic tire) with a tread comprising arc shaped grooves. **The arc-shaped grooves are connected together such that an "arcuate curved main groove" having a continuous inner edge is provided on each side of the tread center (figure 1 or figure 6).** In claim 1, "plurality of arcuate grooves that are circumferentially formed, with ends of adjacent arcuate grooves connected to each other, so as to be continuous in a repeated manner" reads on German 475's connected arc shaped grooves shown for example in figure 1 or figure 6. In claim 11, "said arcuate grooves including adjacent inner side edges, that face said circumferential straight main groove and that are connected to each other, so as to be continuous in a repeated manner" reads on German 475's connected arc shaped grooves shown for example in figure 1 or figure 6. German 475 also teaches providing a wide central groove 10 at the tread center 2c to improve aquaplaning resistance wherein the wide central groove 10 is a straight wide central groove. See figure 9. **German 475 teaches that the wide central groove 10 may be used in all of the disclosed embodiments and not just the figure 9 embodiment.** See paragraph 40 of the machine translation. Hence, German 475 substantially discloses the claimed invention except for the smaller width circumferential auxiliary grooves.

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As to claim 1, it would have been obvious to one of ordinary skill in the art to provide German 475's directional tread pattern with auxiliary circumferential grooves having a width of less than 2 mm so as to have a width less than that of the straight wide central groove 10 and the "arcuate curved main grooves" (4a, 4b, 4c) formed by the connected arc shaped grooves 4 since Japan 711 suggests providing a directional tread pattern comprising main circumferential grooves having a width of 4-12 mm with **narrow circumferential grooves having a width of 2 mm or less** to *increase wandering performance and prevent wear* (paragraph 31 of machine translation). Hence, Japan 711 motivates one of ordinary skill in the art to provide German 475's directional tread with "narrow auxiliary circumferential grooves" having a width (i.e. 2 mm or less) less than the width arc-shaped main grooves and wide central main groove to increase wandering performance and prevent wear. One of ordinary skill in the art would have readily appreciated that German 475's "arcuate curved main grooves" and "wide central groove" can and should have a width greater than the width of 2 mm or less for the circumferential groove 20 suggested by Japan 711 since these grooves of German 475 are for channeling water and improving aquaplaning performance.

With respect to see through state, it would have been obvious to one of ordinary skill in the art to provide German 475's connected arc-shaped main grooves such that the "arcuate curved main grooves" are circumferentially formed to be in a see through state since (1) German 475 shows that the curvature of the arc shaped grooves 4 for improving aquaplaning may be such that the connected arc shaped main grooves form a relatively straight "arcuate curved main groove" (see left side of figure 9) and (2)

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Japan 208, directed to a tread design for improved dry and wet performance, suggests connecting grooves such that the connected grooves are circumferentially formed to be in a see through state defining a width w to prevent lowering of drainage property.

Hence, German 475 and Japan 208 disclose the same feature of a *circumferential groove having non-linear edges* and Japan 208 motivates one of ordinary skill in the art to increase the width of such a groove to form a "window" to prevent lowering of drainage property.

With respect to diagonal grooves, each of German 475's arc shaped grooves extends diagonally to the tread edge and Japan 711 suggests locating the narrow circumferential grooves near the tread edges such that they cross diagonal grooves.

As to claim 5, it would have been obvious to one of ordinary skill in the art to provide the straight main wide central groove and the arcuate curved main groove with widths of 5-15 mm in view of (1) German 475's teaching to use "main" grooves 4 and 10 for improving aquaplaning performance and (2) Japan 711's teaching to form main grooves in a tire tread with a width of 4-12 mm.

As to claim 6, Japan 711 teaches a width of 2 mm for the narrow circumferential grooves 20.

As to claim 7, it would have been obvious to one of ordinary skill in the art to provide the inclined grooves (the arc shaped grooves between the "arcuate curved main groove" and the tread edge) with a width of 1-7 mm in view of (1) German 475's teaching to use "main" grooves 4 for improving aquaplaning performance and (2) Japan 711's teaching to form main grooves in a tire tread with a width of 4-12 mm.

As to claims 8-10, note "convex" shape for grooves 4 in figures 1, 6 or figure 9 of German 475.

9) Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over German 475 (DE 4239475) in view of Japan 711 (JP 2002-059711) and Japan 208 (JP 03-074208) as applied above and further in view of Japan 829 (JP 07-164829) and / or Gerresheim et al (US 5,996,661).

As to claims 11-14, it would have been obvious to one of ordinary skill in the art to form German 475's inclined grooves 4, which extend from the central region of the tread, such that their outer edge portions are located within the tread shoulder region without extending to an outer edge of the tread shoulder region in view of (1) Japan 829's suggestion to terminate inclined grooves, which extend from a central region of the tread, within the tread shoulder region without extending to the outer edge of the tread shoulder region defined by tread with TW to suppress pattern noise and improve wet performance without deteriorating the steering stability and/or (2) Gerresheim et al teaching to terminate arc shaped inclined grooves 8 within a tread shoulder region without extending to the outer edge of the tread shoulder region as shown in figures 1-2.

10) Claims 11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over German 475 (DE 4239475) in view of Japan 711 (JP 2002-059711) and further in view of Japan 829 (JP 07-164829) and / or Gerresheim et al (US 5,996,661).

German 475, directed to a tread design producing good aquaplaning properties but without increasing roll noise, discloses a vehicle tire (pneumatic tire) with a tread

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comprising arc shaped grooves. **The arc-shaped grooves are connected together such that an "arcuate curved main groove" having a continuous inner edge is provided on each side of the tread center (figure 1 or figure 6).** In claim 1, "plurality of arcuate grooves that are circumferentially formed, with ends of adjacent arcuate grooves connected to each other, so as to be continuous in a repeated manner" reads on German 475's connected arc shaped grooves shown for example in figure 1 or figure 6. In claim 11, "said arcuate grooves including adjacent inner side edges, that face said circumferential straight main groove and that are connected to each other, so as to be continuous in a repeated manner" reads on German 475's connected arc shaped grooves shown for example in figure 1 or figure 6. German 475 also teaches providing a wide central groove 10 at the tread center 2c to improve aquaplaning resistance wherein the wide central groove 10 is a straight wide central groove. See figure 9. **German 475 teaches that the wide central groove 10 may be used in all of the disclosed embodiments and not just the figure 9 embodiment.** See paragraph 40 of the machine translation. Hence, German 475 substantially discloses the claimed invention except for the smaller width circumferential auxiliary grooves.

As to claim 1, it would have been obvious to one of ordinary skill in the art to provide German 475's directional tread pattern with auxiliary circumferential grooves having a width of less than 2 mm so as to have a width less than that of the straight wide central groove 10 and the "arcuate curved main grooves" (4a, 4b, 4c) formed by the connected arc shaped grooves 4 since Japan 711 suggests providing a directional tread pattern comprising main circumferential grooves having a width of 4-12 mm with

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narrow circumferential grooves having a width or 2 mm or less to *increase wandering performance and prevent wear* (paragraph 31 of machine translation).

Hence, Japan 711 motivates one of ordinary skill in the art to provide German 475's directional tread with "narrow auxiliary circumferential grooves" having a width (i.e. 2 mm or less) less than the width arc-shaped main grooves and wide central main groove to increase wandering performance and prevent wear. One of ordinary skill in the art would have readily appreciated that German 475's "arcuate curved main grooves" and "wide central groove" can and should have a width greater than the width of 2 mm or less for the circumferential groove 20 suggested by Japan 711 since these grooves of German 475 are for channeling water and improving aquaplaning performance.

With respect to diagonal grooves, each of German 475's arc shaped grooves extends diagonally to the tread edge and Japan 711 suggests locating the narrow circumferential grooves near the tread edges such that they cross diagonal grooves.

With respect to without extending to an outer edge, it would have been obvious to one of ordinary skill in the art to form German 475's inclined grooves 4, which extend from the central region of the tread, such that their outer edge portions are located within the tread shoulder region without extending to an outer edge of the tread shoulder region in view of (1) Japan 829's suggestion to terminate inclined grooves, which extend from a central region of the tread, within the tread shoulder region without extending to the outer edge of the tread shoulder region defined by tread with TW to suppress pattern noise and improve wet performance without deteriorating the steering stability and/or (2) Gerresheim et al teaching to terminate arc shaped inclined grooves 8

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within a tread shoulder region without extending to the outer edge of the tread shoulder region as shown in figures 1-2.

Remarks

9) Applicant's arguments with respect to claims 1 and 5-14 have been considered but are moot in view of the new ground(s) of rejection.

10) No claim is allowed.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven D. Maki/
Primary Examiner, Art Unit 1791

Steven D. Maki
March 16, 2008